said light scattering mechanism comprises a flattened and scattering auxiliary film formed to cover the uneven insulation film.

REMARKS

The specification has been amended to employ more idiomatic English.

The allowance of claims 16, 17, and 19 is noted with thanks. Claims 16 and 19 have been rewritten in independent form. No new matter has been entered.

Pursuant to 37 CFR 1.121 marked copies of the amended specification paragraphs and amended claims showing the changes made therein accompany this Amendment.

Turning to the rejection of claims 12-15 and 18 under 35 USC §103 as obvious over the Applicants' admitted prior art in view of U.S. Patent 5,724,111 to Mizobata et al., the Examiner's rejection is in error. As the Examiner noted, the Applicant's admitted prior art fails to teach the light scattering mechanism on the liquid crystal side of the opposite substrate. However, Mizobata et al. cannot be combined with the Applicant's admitted prior art to render obvious this aspect of the instant invention.

The Manual of Patent Examining Procedure provides in § 2143.01 that in order to establish a *prima facie* case of obviousness "there must be some suggestion or motivation in the prior art . . . to modify the reference or combine the reference teachings." Further, "the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination," and "the teaching or suggestion to make the claimed combination must be found in the prior art, not the applicant's disclosure."

Here, claim 12 teaches a color filter formed on the driving element substrate, and a light scattering mechanism formed on the liquid crystal side of the opposite substrate. This

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combination of elements reduces the production of color mixing and uncontrollable light when light reflects through both the liquid crystal and the color filter resulting in improved hue reproduction and display contrast (specification pages 4-10). In fact, the improved hue and contrast of the display is a result of the width between the specific incident light region included in the opposite substrate and the color filter, which the Applicants' sworn specification has disclosed as critical to the invention (specification page 18).

Alternatively, Mizobata et al. teaches a liquid crystal display that functions entirely differently than the display disclosed in the instant claims. The Mizobata et al. device is primarily concerned with improving display brightness in monochrome displays, and discloses only that a color liquid display with improved brightness can be generated by adding a color filter to the upper insulative plate (col. 5, lines 64-67 through col. 6, lines 1 and 2). Mizobata et al. does not teach or suggest improving display contrast or hue by providing a color filter on the driving element substrate and a light scattering mechanism on the liquid crystal side of the opposite substrate or that the width between these elements is critical in reducing color mixing and uncontrollable light. In fact, Mizobata et al. teaches away from the instant claims by disclosing that a color filter could be placed on the upper insulative plate of their device. Thus, one skilled in the art would not be motivated by Mizobata et al. to modify the Applicants' admitted prior art by placing a light scattering mechanism on the liquid crystal side of the opposite substrate.

It is therefore submitted that the Examiner has employed impermissible hindsight, and has applied the teachings of the present invention to the prior art, cherry-picking from Mizobata et al. the needed element of claim 12, while disregarding the teachings of Mizobata et al. as a

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whole, to make out a case for obviousness. Accordingly, the rejection of claims 12-15 and 18 should be withdrawn.

Claims 16 and 19 have been rewritten in independent form and are believed to be allowable as acknowledged by the Examiner. Claim 17 depends on claim 16 and is also allowable.

Having dealt with all the objections raised by the Examiner, the Application is believed to be in order for allowance.

In the event that there are any fee deficiencies, or additional fees are payable, please charge (or credit any overpayment) Deposit Account No. 08-1391 as necessary.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on November 25, 2002, at Tucson, Arizona.

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MARKED COPY OF AMENDED SPECIFICATION PARAGRAPHS

SERIAL NO. 09/690,330

DOCKET NO. NEC 00FN054

MARKED SPECIFICATION PARAGRAPHS SHOWING CHANGES MADE:

Paragraph bridging pages 4 and 5, beginning at page 4, line 27:

However, since the conventional reflection-type color liquid crystal display apparatus is provided with the light scattering mechanism outside of the opposite substrate, [there is a problem that] the starting point of scattering is set at a point distant from the liquid crystal so that the contrast is lowered.

Paragraph beginning at page 6, line 2:

The fact that light passes through two color filters, like light 134 shown in Fig. 4, means that [a] color mixing is generated. On a pixel region [on] in which red color is to be essentially displayed, [the mixed color] a mixture of red and blue colors is displayed. Furthermore, the light passes through the liquid crystals of the two pixel regions with the result that uncontrollable light 135, in which a phase difference cannot be predicted, is generated[,] because the light passes through liquid crystals 103R and 103B and are controlled differently from each other. Consequently, the luminance [at the time] of a black display will rise, [for example,]even if the color filter 113R of the R pixel attempts to provide a black display. Naturally, in the case where the light passes through both the color filter 113B and the liquid crystal 103B of the adjacent B pixels like light 136, both of the color mixing and uncontrollable light are simultaneously generated. The degree of such color mixing and the degree of the generation of uncontrollable light become large with an increase in light which traces the same path as the abnormal light 131X described above with the result that the hue reproduction zone is narrowed and the contrast is lowered. The lowering of the contrast becomes more remarkable as the starting point of scattering generated by the scattering plate 125, namely the position where the scattering plate 125 exists becomes distant from the liquid crystal 103.

MARKED COPY OF AMENDED CLAIMS

SERIAL NO. 09/690,330

DOCKET NO. NEC 00FN054

MARKED CLAIMS SHOWING CHANGES MADE:

16. (Amended) [The reflection-type color liquid crystal display apparatus according to claim 15,] A reflection-type color liquid crystal display apparatus comprising:

a liquid crystal driving element formation substrate on which a liquid crystal driving element is formed;

an opposite substrate which is opposite to said liquid crystal driving element formation substrate;

a liquid crystal sandwiched between said liquid crystal driving element formation substrate and said opposite substrate;

a color filter provided on the driving element formation substrate; and

a light scattering mechanism provided at the liquid crystal side surface of the opposite substrate; wherein

said opposite substrate has a transparent insulation substrate; and wherein

said light scattering mechanism comprises an uneven insulation film formed on the surface of the liquid crystal side of the transparent insulation substrate; and wherein

said light scattering mechanism comprises a scattering auxiliary film formed on the uneven insulation film and having a refractive index different from that of the uneven insulation film.

19. (Amended) [The reflection-type color liquid crystal display apparatus according to claim 15,] A reflection-type color liquid crystal display apparatus comprising:

a liquid crystal driving element formation substrate on which a liquid crystal driving element is formed;

an opposite substrate which is opposite to said liquid crystal driving element formation substrate;

a liquid crystal sandwiched between said liquid crystal driving element formation substrate and said opposite substrate;

a color filter provided on the driving element formation substrate; and

a light scattering mechanism provided at the liquid crystal side surface of the opposite substrate; wherein

said opposite substrate has a transparent insulation substrate; and wherein

said light scattering mechanism comprises an uneven insulation film formed on the surface of the liquid crystal side of the transparent insulation substrate; and wherein

said light scattering mechanism comprises a flattened and scattering auxiliary film formed to cover the uneven insulation film.